AMENDMENTS TO THE DRAWINGS

Applicant is submitting herewith two (2) sheets of Replacement Drawings which include FIGS. 17 and 18. Applicant has added the legend --Prior Art-- to FIGS. 17 and 18.

These replacement sheets are intended to replace FIGS. 17 and 18 filed on January 11, 2006, and are being submitted to overcome the Examiner's objections in the Office Action dated October 17, 2007.

Attachment: Replacement Sheets

REMARKS

Claims 16-39 are all the claims pending in the application. Claims 20, 21, 23, 25, 30, 31 and 33 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claim 25 has been rewritten into independent form accordingly.

I. Claim Status:

Claims 19, 27 and 35 have not been addressed in the detailed comments section of the Office Action. While claim 35 appears to be allowable on the Office Action Summary, claims 19 and 27 are not mentioned.

Applicants respectfully request clarification from the Examiner regarding this issue.

II. Drawings:

The Examiner has indicated acceptance of the drawing figures filed on January 11, 2006; however, the Examiner has indicated that FIGS. 17 and 18 should be designated by a legend such as --Prior Art--. Applicants amend the drawings accordingly.

III. Prior Art Rejections:

A. Claims 24, 26, 37 and 38 are rejected under 35 U.S.C. § 102(a) as being anticipated by the applicant cited prior art.

Claim 24

The Examiner considers claim 24 to read on the admitted prior art discussed in the pending application. However, the flow path portion and the flow path opening/closing unit is considerably different in the present invention and not taught or disclosed in the admitted prior art.

As illustrated in FIG. 11, for example, the present invention provides a flow path portion 33b through which the space SP1 communicates with the interior of the tank, and through which the liquid flows in and out. A flow path opening/closing unit 34 is configured to open and close at least one end of the flow path portion 33b.

In the Office Action, the Examiner asserts that the "flow path portion" of the admitted prior art is located at the bottom of the detector 110 through measurement unit 111. The Examiner considers the capability to close the ventilating path 112a to stop the flow of gas in and out, to read on the "flow path opening/closing unit".

In view of the Examiner's broad interpretation of claim 24, Applicants amend claim 24 to clarify that the "flow path opening/closing unit" is configured to stop the flow of **liquid** and is located near the flow-rate measuring unit.

The conventional device disclosed in the pending application fails to teach or suggest this structure, and thus, amended claim 24 is distinguishable from applicant's cited prior art.

Claims 26 and 27

Claims 26 and 27 should be patentable for at least the same reasons as claim 24, by virtue of their dependency therefrom.

Moreover, it is noted again that no specific rejections have been made against claim 27, and therefore it is believed that this claim is patentable.

Claim 38

Claim 38 is amended to clarify that the flow path opening/closing unit controls the flow of liquid, and that the unit is located near the flow-rate measuring unit.

Clearly, the conventional device illustrated in FIG. 17 fails to provide these features, and thus, amended claim 38 is patentable.

B. Claims 16-18, 22, 28, 29, 32, 36 and 39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant admitted prior art in view of Lagergren (4,732,035) and Maresca (5,950,487).

Claim 16

One of the main distinctions between the claimed invention of claim 16 and the admitted prior art is (1) the bottom end is detachably attached to the bottom plate and (2) the upper end is supported in such a manner that upper end of the leak detector is movable relatively to the top plate.

Thus, an important feature of the present invention is that the height of the flow-rate measuring unit with respect to the bottom plate of the tank can be kept constant even when in the presence of distortions of the top plate or the side plate (due to variations of the ambient temperature), which makes it possible to prevent a pseudo flow of liquid caused by a change in the height of the flow-rate measuring unit from being measured as a non-zero flow (see page 37, line 22, for example).

Lagergren has a leak detector for detecting leakage of liquid based on a change in the surface level of liquid (which has a temperature coefficient substantially lower than the temperature coefficient of the fluid product in the tank) in a vertically set pressure tube 24 by measuring the surface level by using a float 50, a reflector 76 supported by the float 50, and a laser. As noted at col. 4, lines 16-20, the vertical riser pipe 16 or other support structure (e.g., bracket within the tank) supports the pressure tube 24 in manner such that the second end 28 of the tube 24 is located adjacent the base 12 of the tank 10. Thus, it is clear that the second end 28 of the tube 24 is not necessarily fixed to the base 12 of the tank 10, as long as the second end 28 of the tube 24 extends to the vicinity of the base 12 of the tank. Thus, this reference fails to

motivate one of ordinary skill in the art to modify the admitted prior art to have "a bottom attaching portion provided at the bottom end of the leak detector to detachably attach the bottom end to the bottom plate".

In addition, while the Examiner considers Lagergren to disclose the second end being supported in such a manner that the tube 24 is vertically movable, to the contrary, the upper end of the tube 24 is supported by the riser 16, and there is no teaching or suggestion that the two elements are slidable with respect to each other. There is no provision for restraining or controlling the vertical movement, and there is no discussion related to vertical movement anywhere in the document. Thus, there is not "a top assembly…so that the upper end of the leak detector is movable relatively to the top plate".

Still further, there is no motivation for providing the bottom attaching portion nor the top assembly structure to the admitted prior art. That is, even if one were to consider that these features are disclosed in Lagergren, there is no motivation for modifying the admitted prior art to have this structure.

Maresca fails to remedy these deficiencies. Maresca is a gauge for measuring liquid levels by reading binary coded patterns provided in a flexible scale 12 vertically set in a container 20 by using reading means (Fig. 6A, B) installed in a float 32 movable along the flexible scale 12. This reference is directed to different subject matter and fails to provide any motivation for one of ordinary skill in the art to remedy the deficiencies of the admitted prior art and Lagergren, such as having the upper end supported in a through opening so that it is movable relatively to the top plate.

In view of the foregoing, one of ordinary skill in the art would fail to arrive at the invention according to claim 16 in view of the combination of cited references.

Claims 17-19 and 22

Dependent claims 17-19 and 22 are patentable for at least the same reasons as claim 16, by virtue of their dependency therefrom.

Moreover, it is noted that no prior art rejections have been applied against claim 19, and therefore, this claim is believed patentable.

Claim 28

Claim 28 is patentable for similar reasons to those discussed above for claim 16. Namely, the combination of the cited references fails to teach or suggest "a bottom attaching portion provided at the bottom end of the leak detector to detachably attach the bottom end to the bottom plate" nor "a top assembly attached to the top plate so as to cover an opening provided in the top plate and having a through opening through which an upper end of the leak detector is supported in such a manner that the upper end of the leak detector is movable relatively to the top plate in a direction substantially perpendicular to a surface of the liquid".

Lagergren and Maresca fail to disclose these features, and moreover, even if one were to assume that these references were capable of these features, there is no motivation for modifying the admitted prior art to utilize this structural configuration unless afforded the benefit of Applicant's own disclosure.

Claims 29, 32 and 35

Claims 29, 32 and 35 are believed patentable at least by virtue of their dependency from claim 28.

Moreover, it is noted that no prior art rejections have been applied against claim 35, and therefore, this claim is believed patentable.

Claim 36, 37 and 39

Claims 36 and 39 are patentable for at least the same reasons as claims 16 and 28. Namely, bottom attaching portion and the assembly structure are missing from the combination of cited references.

Claim 37 is patentable at least by virtue of its dependency from claim 36.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/Ellen R. Smith/

Ellen R. Smith
Registration No. 43,042

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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